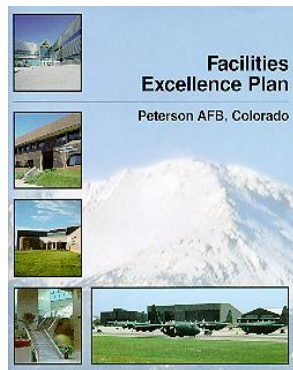
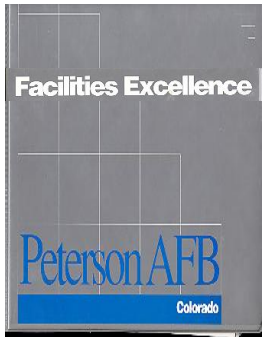




Peterson AFB Facilities Excellence



A Vehicle to Sustainable Design and Achieving LEED Ratings



Weston Solutions Inc.





Summary



- **DoD Design Directives**
 - Sustainable Design Directives
 - Overview of LEED Certification
 - Project for discussion (Aerial Port / Airlift Control Flight Facility)
 - Prerequisites
 - Easy Points
 - More Difficult Points
- **Incorporating LEED requirements throughout FEP to achieve rating**
 - Facility Excellence Plan Update
 - Maintaining the Green Image
 - Xeriscape Landscape Design



Sustainable Design Directives



- **19 Dec 01 Memorandum**
 - “The goal is to have all MILCON projects in the FY09 program capable of achieving LEED™ certification.”

- **2006 Federal Leadership in High Performance and Sustainable Buildings MOU**
 - Establishes 5 key Goals
 1. Employ integrated design principles
 2. Optimize energy performance
 3. Protect and conserve water
 4. Enhance indoor environmental quality
 5. Reduce Environmental impact of materials



LEED™ Overview



- 6 Categories, 69 total possible points
 - Sustainable Sites (14 possible points)
 - Water Efficiency (5 possible points)
 - Energy and Atmosphere (17 possible points)
 - Materials & Resources (13 possible points)
 - Indoor Environmental Quality (15 possible points)
 - Innovation & Design Process (5 possible points)
- Certified: 26 – 32 points
- Silver: 33-38 points
- Gold: 39-51 points
- Platinum: 52-69 points



PREREQUISITES



- **Sustainable Site:**
 - Erosion & Sediment Controls (SS)
 - Easy - Required by EPA & Base
- **Energy and Atmosphere**
 - Fundamental Building Systems Commissioning
 - Gov't inspector / Engineer can serve as commissioning authority (Or AE if retained for title 2 services).
 - Minimum Energy Performance
 - Requires energy efficient appliances & systems throughout the building.
 - Meet or exceed ASHRAE/IESNA 90.1-1999
 - May require additional cost
 - CFC Reduction in HVAC & Refrigeration Equipment
 - Easy – new HVAC and Refrigeration already comply



PREREQUISITES



- Materials & Resources
 - Storage and collection of recyclables
 - Provide recycling area for building occupants
- Indoor Environmental Quality
 - Minimum Indoor Air Quality (IAQ) Performance
 - Meet ASHRAE 62-1999
 - Environmental Tobacco Smoke Control
 - Smoking already not allowed in DOD facilities
- Innovation and Design – No prerequisites



First Impressions



21 SW

"GREEN IMAGE"

- Common-sense approach
- Incorporates Force Protection
- Incorporates Xeriscape
- Emphasizes "high-vis" areas



Maintaining an Excellent Impression



Xeriscape Initiatives



21st SW

Xeriscape & Force Protection Principles



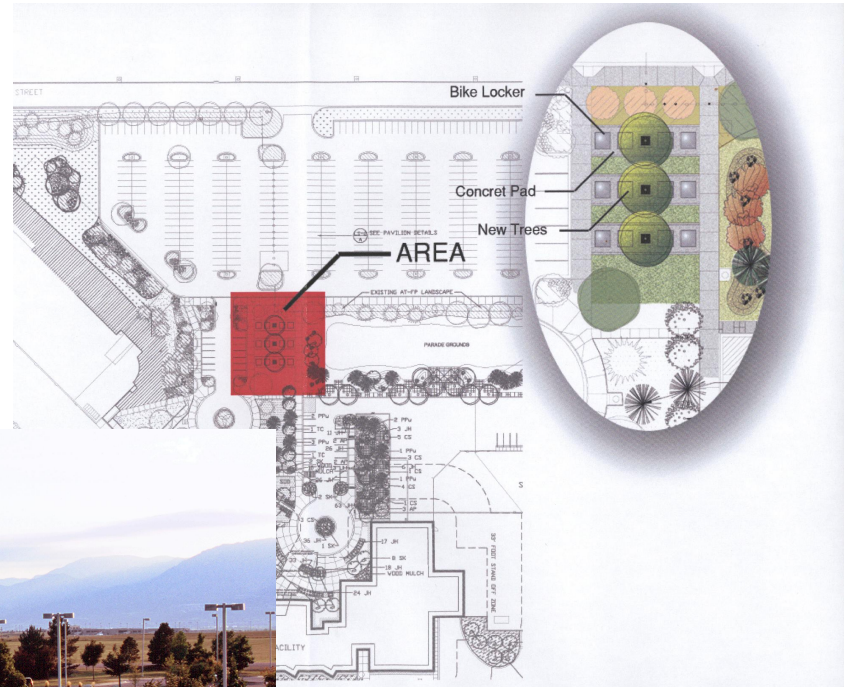
***The Green Image
Blended with Force
Protection and Xeriscape***



Attractive Solution



21st SW





Attractive Solution



21st Century

- Sustainability:
 - Integrate sustainable concepts
 - LEED requirements will be integrated to meet attractive Facilities Excellence solutions

This



Not This



It doesn't have to be ugly



Case Study

Airlift Control Flight Facility



Get The Easy Points

- Existing site conditions
- Inherent design elements
- local products

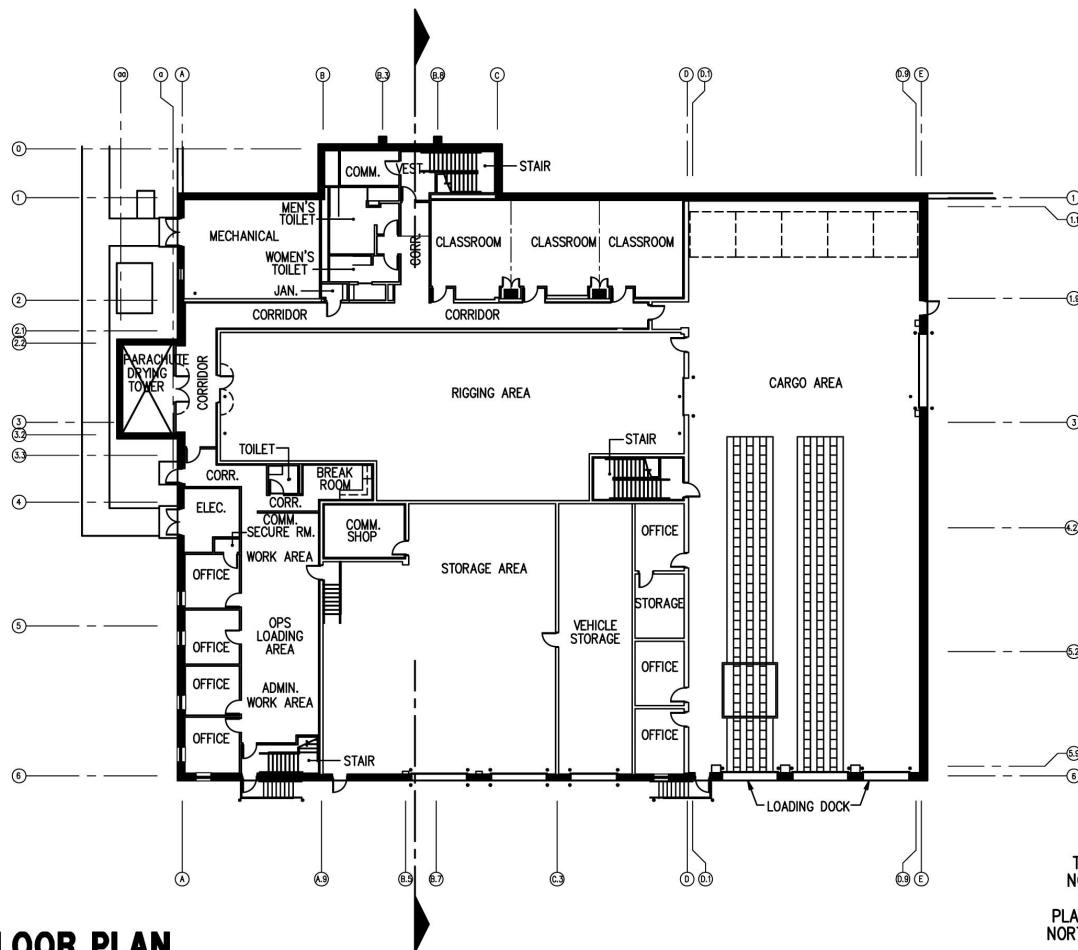




Floor Plan



21st SW



FIRST FLOOR PLAN
NO SCALE



The Easy Points (21 points)



- Site Selection – 1 point
- Alternative Transportation (bicycles) – 1 point
- Alternative Transportation (parking) – 1 point
- Reduce heat islands – 1 point
- Water efficient landscaping – 2 points
- Water use reduction – 2 points
- Ozone Depletion – 1 point
- Recycled Content – 2 points
- Local / Regional Materials – 2 points
- Construction IAQ Management – 2 points
- Low Emitting Materials – 4 points
- Daylight and Views – 2 points



The More Difficult Points (15 points)

- Reduced Site Disturbance – 2 points
- Storm water, no net increase – 2 points
- Reduce heat islands – 1 points
- Light Pollution Reduction – 1 point
- Additional Commissioning – 1 point
- Construction Waste Management – 2 points
- Rapidly Renewable Materials – 1 point
- Certified Wood – 1 point
- CO₂ Monitoring – 1 point
- Increase Ventilation Effectiveness – 1 point
- Thermal Comfort – 2 points



The Difficult Points (15 points)



- Urban Redevelopment – 1 point
- Brownfield Redevelopment – 1 point
- Mass Transit Siting – 1 point
- Alternative fuel refueling – 1 point
- Innovative Wastewater technology – 1 point
- Renewable Energy – 1 to 3 points
- Measurement & Verification – 1 point
- Green Power – 1 point
- Resource Reuse – 2 points
- Indoor Chemical & Pollutant Source control – 1 point
- Controllability of Systems – 2 points



WAY AHEAD



- Green Roofs
- Pervious pavements
- Rain gardens or bio-swales along perimeter
 - Helps achieve 2 points in stormwater management